L Number	Hits	Search Text	DB	Time stamp
1	69980	242/$.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/19 12:47
2	8048	winding NEAR apparatus	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/19 12:48
3	2364	(winding NEAR apparatus) and 242/$.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/19 12:57
5	9	((winding NEAR apparatus) and 242/$.ccls.) and (guide NEAR body)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/19 12:54
6	612	((winding NEAR apparatus) and 242/$.ccls.) and bobbin	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/19 12:58
7	501	(((winding NEAR apparatus) and 242/$.ccls.) and bobbin) and guide	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/19 13:35
8	2657	coil adj former	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/19 13:36
9	46	(winding NEAR apparatus) AND (coil adj former)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2003/06/19 13:36

PAT-NO: JP358186926A
DOCUMENT-IDENTIFIER: JP 58186926 A
TITLE: COIL WINDING METHOD AND APPARATUS THEREFOR
PUBN-DATE: November 1, 1983

INVENTOR-INFORMATION:

NAME	COUNTRY
MICHISAKA, AKIRA	

ASSIGNEE-INFORMATION:

NAME	COUNTRY
IKARI KOSAN KK	N/A

APPL-NO: JP57069814
APPL-DATE: April 26, 1982

INT-CL (IPC): H01F041/08 , B65H051/16

US-CL-CURRENT: 242/434.8

ABSTRACT:

PURPOSE: To wind a fine wire to a troidal core through a fine hole without accurate positioning by causing a wire to pass through the core hole with an air flow due to vacuum absorption and winding a wire to the core with injected air flow.

CONSTITUTION: A turn table 12 rotates, a core 1 is guided to the specified station and a vacuum pump 18 absorbes through an absorbing pipe 6. A wire top of wire 4 passes a guide hole 17 and hole 2 together with air flow and is pulled into the absorbing pipe 6. Absorption stops and compressed air is injected to the end of a inductor 8 by means of a jet nozzle 7. A wire 4 is guided to a guide body 14 along the external wall of the inductor 8 together with air flow. The guide body 14 rotates the when a slit 16 matches a slit 15 of a fixed guide body 13, the absorbing pipe 6 absorbes again, the wire 4 goes out of the slits 20, 15 and 16 and is wound around circumference of the core 1.

the other end opening to the side surface of the block 217c. These narrow groove sections 273 and 275 have a size to allow insertion of the wire 4 therethrough. Grooves 268b and 269b are formed above and below the hole 262 and on the closing surface 264 of the other block 217c. The grooves 268b and 269b have the shape obtained by dividing a cone into half along a plane including an axis thereof, as in the grooves 268a and 269a. These grooves 268b and 269b, however, do not have the narrow sections as the grooves 268a and 269a, but they are tapered by the same angle as that of the tapered groove sections 272 and 274. The upper ends of the grooves 268b and 269b open to the side surfaces of the blocks 217c and to the hole 262. The grooves 268b and 269b are formed such that the vertices thereof are located within the open regions of the tapered groove sections 272 and 274 on the closing surfaces 264 when the blocks 217 are closed. The grooves 268b and 269b are thus formed to be similarly smaller than the tapered groove sections 272 and 274. As shown in FIG. 37, a length B of a bottom line and a height H of the tapered groove section 272 or 274 of another isosceles triangle at the closing surface 264 of the block 217c are set to be larger thn a length b of a bottom line and a height h of the groove 268b or 269b of an isosceles triangle. The upper opening of the tapered groove section 272 or 274 is level with that of the groove 268b or 269b.

(51) When the guide holes 268 and 269 are formed as described above, even if the blocks 217c are shifted from each other in directions (directions of arrows C in FIG. 37) perpendicular to the insertion direction of the wire 4 in a state that the blocks are closed, the wire 4 can be securely positioned and guided by the guide holes. In other words, even if the blocks 217c are shifted from each other in the directions of the arrows C within a range of a distance .DELTA.L, the vertices of the grooves 268b and 269b are located within the tapered groove sections 272 and 274, respectively. Therefore, as long as the vertices of the grooves 268b and 269b are located within the sections 272 and 274, the wire 4 can be reliably guided by the narrow groove sections 273 and 275. However, if the vertices of the guide grooves 268b and 269b fall outside the tapered groove sections 272 an 274, as indicated by the broken line in FIG. 37, blind hole portions are formed respectively in the guide holes 268 and 269 which prevent insertion of the wire 4. For this reason, the shift amount or distance of the blocks 217c must fall within the range of distance .DELTA.L. However, if grooves of the same shape as that of the groove 268a are symmetrically formed in both blocks 217c, that is, if the wire can be inserted only if the pair of narrow groove sections 273 and 275 are aligned with each other, the slightest shift between the blocks 217c may prevent insertion of the wire 4. As compared to this, in accordance with this modification, insertion and positioning of the wire 4 can be smoothly and reliably performed.

(52) In the third embodiment and modification thereto described above, the number of guide holes can be arbitrarily set. The pivot shafts 220 are driven such that one pivot shaft 220 serves as a drive shaft while the other pivot shaft 220 serves as a driven shaft. However, the two pivot shafts 220 may be driven independently of each other while being synchronized in rotation. Power transmission to the drive rollers 224 need not be performed through the O-rings 225 but through gear mechanisms. The number of feed